

# REPLY TO LICON ON TIME TRAVEL

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ABSTRACT: In this paper I offer a rejoinder to the criticisms raised by Jimmy Alfonso Licon in “No Suicide for Presentists: A Response to Hales.” I argue that Licon's concerns are misplaced, and that his hypothetical presentist time machine neither travels in time nor saves the life of the putative traveler. I conclude that sensible time travel is still forbidden to presentists.

KEYWORDS: time travel, presentism, eternalism, metaphysics

Presentists are committed to the simultaneity of reality; for them, everything that exists, exists in the objective now. They avoid quantifying over times other than the present by insisting on essentially tensed facts. Eternalists, on the other hand, hold that all times are equally real, and that ‘the present’ is an indexical like ‘here,’ ‘this,’ or perhaps ‘actual.’ In “No Time Travel for Presentists,” I argue that time travel requires leaving the objective present, which, for a presentist, contains all of reality.<sup>1</sup> Therefore to leave the present is to leave reality entirely; i.e. to go out of existence. Thus presentist ‘time travel’ is best seen as a form of suicide, not a mode of transportation to a disjoint time. Time travel is impossible for presentists.

Licon’s objection to my suicide argument has two key components.<sup>2</sup> The first is the assumption of Humean supervenience for times, and the second is a thought experiment about (what Licon considers) a presentist time machine. The Humean supervenience constraint is that the time of the universe supervenes on the total arrangement of all the matter/energy it contains. If there are two states of the universe with identical matter/energy configurations, then they are temporally identical as well. It is somewhat analogous to the idea that two clocks with their gears and hands in the same positions are set to the same time. Licon seems to be presupposing a non-relativistic, absolute time for the universe, but let that pass. It doesn’t really matter for my rejoinder.

Here’s Licon’s conception of a presentist time machine: “if machine F is capable of rearranging all of the matter and energy in the universe, such that it is

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<sup>1</sup> Steven D. Hales, “No Time Travel for Presentists,” *Logos & Episteme* I, 2 (2010): 353-360.

<sup>2</sup> Jimmy Alfonso Licon, “No Suicide for Presentists: A Response to Hales,” *Logos & Episteme* II, 3 (2011): 455-464.

indistinguishable from a past or future moment, and the identity of indiscernibles holds between the instantiated moment and the past or future moment, then F is a time machine.”<sup>3</sup> So if we have a machine that instantaneously rearranges all of the matter/energy in the universe to the precise configuration it had in 1862, then it is once again 1862. Since Licon’s machine resets the great clock of the universe from 2012 to 1862 without passing through any times in between, Licon argues that this is a discontinuous leap and constitutes travel in time. My suicide argument was that a presentist time traveler must leave the time at which all of reality is located (i.e. the present), which means leaving reality *tout court*. Licon’s putative time machine attempts to avoid this objection by bringing the rest of reality along with it.

My response is fairly simple: first, irrespective of the presentist/eternalist debate, Licon’s machine does not describe time travel at all, and secondly, it is still a suicide machine. Here’s why.

### **Not a time machine**

According to David Lewis, a requirement for time travel that is neutral with respect to the presentist *vs* eternalist issue is that the personal time of the traveler be discontinuous with external time. In other words, the time traveler’s calendar must be different from the calendar of the rest of the world. If a time traveler journeys 1000 years into the future, the traveler does not age 1000 years even though the world outside of the time machine does. The distinction between personal time and external time nicely accommodates the view of relativistic physics that a near-light-speed spacecraft is a time machine that travels into the future. Due to relativistic effects, a twin aboard the spacecraft ages much more slowly than her twin back on Earth. When the spacecraft returns to Earth, the traveler may have aged a week whereas her twin aged 30 years. The personal time of the traveler was different than the external time of her Earth-bound twin.

Licon’s ‘time machine’ erases the distinction between personal and external time. His machine instantaneously reconfigures the entire universe, so everything is always at exactly the same time. The would-be traveler’s calendar is exactly the same as everyone else’s. Not distinguishing between personal and external time is a problem because it means that Licon lacks the resources to effectively describe temporal discontinuity.

Suppose we set the controls of Licon’s time machine for one month into the future. According to Licon, this means that the entire universe undergoes a somewhat radical reconfiguration of matter/energy. Yet why should we consider

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<sup>3</sup> Licon, “No Suicide,” 462.

this new state of the universe ‘one month in the future’? There was no alternative future history of the universe, no other calendar on which we can show the days that were skipped or sped through by the time machine. The sole history of the universe involves an unusual redistribution of matter/energy at a certain point, but that doesn’t mean that anything traveled in time, or jumped one month into the future. The universe was in state A at one moment and in state B the next moment. There is no reason at all to think that state B represents a discontinuity in time. It *is* the next moment in time.

By symmetry, the same objection holds for supposed “backwards time travel”. The universe was in state A at one moment, and at some state B the next, which may be qualitatively identical to an earlier state, and still not have traveled backwards in time. In line with Licon’s supervenience requirement, this might be best seen as a recreation, or a reenactment, of an earlier time. The universe is not going backwards in time and then stopping at a designated date because there is no sense in which it is skipping over any other times. Neither the universe nor any proper part of it is temporally disjoint with the rest. Licon’s scenario is more like Tom Robbins’s eternally recurring, manufactured world:

For Christmas that year, Julian gave Sissy a miniature Tyrolean village. The craftsmanship was remarkable. There was a tiny cathedral whose stained-glass windows made fruit salad of sunlight. There was a plaza and *ein Biergarten*. The *Biergarten* got quite noisy on Saturday nights. There was a bakery that smelled always of hot bread and strudel. There was a town hall and a police station, with cutaway sections that revealed standard amounts of red tape and corruption. There were little Tyroleans in leather britches, intricately stitched, and beneath the britches, genitalia of equally fine workmanship. There were ski shops and many other interesting things, including an orphanage. The orphanage was designed to catch fire and burn down every Christmas Eve. Orphans would dash into the snow with their nightgowns blazing. Terrible. Around the second week of January, a fire inspector would come and poke through the ruins, muttering, “If they had only listened to me, those children would be alive today.”<sup>4</sup>

The Tyrolean village resets itself every year, but it does not travel backwards in time. The resetting of its clock just is the village’s next moment in time.

In sum, the notion of temporal discontinuity makes sense only if the distinction between personal and external time is preserved. Since Licon’s ‘time machine’ prohibits a distinction between personal and external time, it cannot produce a discontinuity in time. And since it cannot do that, it is not a time machine after all.

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<sup>4</sup> From Tom Robbins, *Even Cowgirls Get the Blues*, cited in Douglas Hofstadter and Daniel Dennett, *The Mind’s I* (New York: Basic Books, 1981), 295.

### **Still a suicide machine**

According to Licon, backwards time travel means that his machine annihilates every configuration of matter/energy and instantaneously replaces it with a configuration that existed earlier. Now, Licon's commitment to Humean supervenience requires that the time of the universe supervene on the arrangement and construction of absolutely everything in the universe, no exceptions. Therefore included in that annihilated configuration is the supposed time traveler and the time machine itself. The time traveler and time machine did not exist in 1862, and Licon cannot make the familiar presentist move of claiming that the time machine changed the tensed facts about the past so that it becomes true that "there was a time traveler in 1862."

If all of the matter/energy in the present moment is instantly rearranged to the exact configuration of matter/energy in 1862, then no one traveled back in time. '1862' is a rigid designator denoting a particular arrangement of matter and energy, and Licon's Humean supervenience constraint entails that 1862 is recreated down to the smallest detail. A recreation of 1862 does not allow for some matter to be differently assembled so that it forms a 'time traveler' from the future on the grounds that such an arrangement would not be 1862. Since no one currently alive was alive in 1862, a total rearrangement of every particle in the universe to what it was in 1862 means that everyone alive in 2012 just went out of existence. Licon's time machine is a suicide machine after all.

To conclude, Licon hypothesizes a machine that can instantly rearrange all of the matter and energy in the universe. It does not make sense to suppose that the machine discontinuously skips ahead to a future time, nor can such a machine do more than recreate a past time. Therefore it does not provide travel into either the future or the past. Additionally, it cannot offer passage into the past, since neither the machine nor any passenger can be placed into a specifically ordered arrangement of matter and energy (upon which times supervene) that does not already contain them. Thus Licon's machine is not a time machine. However, since the machine annihilates all of the present configuration of the universe without transporting any survivors, it is a suicide machine. So I do not see that Licon's thought experiment counts against my original argument that presentists are incapable of time travel.